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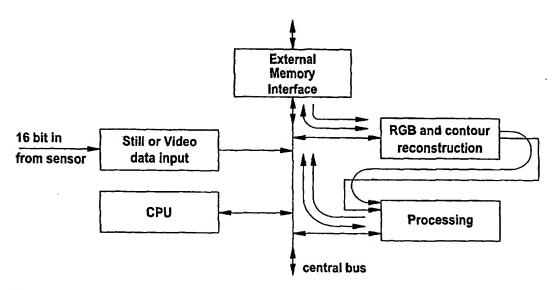
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(54) Title: METHOD AND APPARATUS FOR SIGNAL PROCESSING, COMPUTER PROGRAM PRODUCT, COMPUTING SYSTEM AND CAMERA



(57) Abstract: A reconstruction method based on a white-compensated luminancereconstruction and using filter weights referred to as smartgreen-parameters is proposed. An aliasing free luminance signal, even at the multiples of the sample frequency and in case of a camera without optical low pass filter is achieved. Moreover this white-compensated luminance-signal is free of signal distortion. The proposed method allows a suitable low pass filter to be added or combined and a is particular well suited to implement a variety of abasing free color- and contour-filters. The RGB color signals are reconstructed using filter weights which can be chosen as a function of the heaviness of the sensor matrix and of the optical transfer of the camera.



INTERNATIONAL SEARCH REPORT

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According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols) . $\begin{tabular}{ll} PC & 7 & G06T & H04N \end{tabular}$

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2002/003578 A1 (KOSHIBA OSAMU ET AL) 10 January 2002 (2002-01-10) paragraph '0083! - paragraph '0084! paragraph '0092! - paragraph '0094! paragraph '0107! - paragraph '0195! paragraph '0094!	1–18
1	US 2002/039142 A1 (ZHANG XIAOMANG) 4 April 2002 (2002-04-04) the whole document	1-18
A	WO 99 46730 A (CONEXANT SYSTEMS INC) 16 September 1999 (1999-09-16) page 9, line 18 -page 10, line 10/	1-18

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	ation) DOCUMENTS CONSIDERED TO BE RELEVANT	
Category °	Citation of document, with indication,where appropriate, of the relevant passages	Relevant to claim No.
A	US 2002/025069 A1 (ENDO TOSHIAKI ET AL) 28 February 2002 (2002-02-28) paragraph '0008! - paragraph '0015! paragraph '0017! - paragraph '0022! paragraph '0037! - paragraph '0042!	1-18
	WO 99 04555 A (KONINKL PHILIPS ELECTRONICS NV; PHILIPS SVENSKA AB (SE)) 28 January 1999 (1999-01-28) cited in the application page 10, line 6 -page 20, line 11	1-18
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INTERNATIONAL SEARCH REPORT

plication No n on patent tamily members PCT/ 3/02656 Patent document Publication Patent family Publication cited in search report date member(s) date US 2002003578 10-01-2002 EP A1 1111904 A2 27-06-2001 JP 2002010277 A 11-01-2002 US 2001045988 A1 29-11-2001 US 2002135683 A1 26-09-2002 US 2002012398 A1 31-01-2002 US 2002027604 A1 07-03-2002 2002012054 A1 US 31-01-2002 2002015447 A1 US 07-02-2002 US 2002012055 A1 31-01-2002 US 2002041761 A1 11-04-2002 US 2002039142 JP A1 04-04-2002 2002077645 A 15-03-2002 WO 9946730 16-09-1999 Α US 6507364 B1 14-01-2003 ΑU 2681699 A 27-09-1999 TW 413797 B 01-12-2000 9946730 A1 MO 16-09-1999 JP US 2002025069 A1 28-02-2002 2001320722 A 16-11-2001 WO 9904555 Α 28-01-1999 EP 0935881 A2 18-08-1999 MO 9904555 A2 28-01-1999 JP 2001501070 T 23-01-2001

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